

ARC920010049US1  
09/870,656

In the Drawings:

None

ARC920010049US1  
09/870,656REMARKS

This amendment is in response to the Examiner's Office Action dated 6/16/2005. Reconsideration of this application is respectfully requested in view of the foregoing amendment and the remarks that follow. The examiner's objection with respect to the specification (specifically, with respect to figure 8) has been addressed via a minor amendment to the specification. Specifically, page 16, line 14 through page 17, line 6 of the specification has been amended without adding new matter to include reference to numeral 818. Based on this amendment, applicants respectfully request the examiner to withdraw the objection to the specification.

With respect to the requirement for information under 37 C.F.R. 1.105, applicants wish to note that all relevant prior art that applicants are aware of have been identified in the Information Disclosure Statement (IDS) submitted on 06/01/2001. Additionally, with respect to the request for the source of the equations, applicants wish to note that the general concept of the center-of-mass principle with respect to particles is well known in the field of engineering mechanics, a different field of endeavor, but applicants' equations relate to determining optimal resources based on a center of mass calculation that takes into account weights associated with each client in a client cluster, a teaching that is neither taught nor suggested by the center-of-mass principle, or the prior art in general. Applicants also wish to note that the equations form a part of the invention and there are no publications that were specifically relied on to develop the subject matter.

ARC920010049US1  
09/870,656

### STATUS OF CLAIMS

Claims 1-23 are pending.

Claims 14-20 stand rejected under 35 USC 101 because the claimed invention is directed to non-statutory subject matter.

Claims 1, 2, 4, 6-15 and 18-23 stand rejected under 35 USC 103(a) as being unpatentable over Bingham et al. (USP 6,324,517) in view of the article to Backhaus entitled, "An Engineer's View of Economics," (hereafter Backhaus).

Claims 3, 5, 16 and 17 stand rejected under 35 USC 103(a) as being unpatentable over Bingham et al. in view of Backhaus, as applied to claims 1 and 14 above.

### OVERVIEW OF CLAIMED INVENTION

The presently claimed invention provides for a system and method for dynamic resource scheduling to optimize the location of meeting participants. The present invention is used in conjunction with a positioning system, such as a global positioning system (GPS), that is able to identify one or more participants and is able to detect the locations associated with these participants. Furthermore, static locations (e.g., conference rooms) are available as inputs to the system and method of the present invention. Given these dynamic positioning inputs associated with one or more participants, the invention detects the location of the meeting participants and clusters them based on their proximity. Next, the invention determines the availability of suitable meeting locations (static locations). Then, the invention determines the optimum meeting location, given the participant clusters and their proximity to the available meeting locations.

In one embodiment, one or more filters are applied serially to the resources in question. For instance, an importance rating can be applied to meeting participants, indicating that it is

Page 12 of 19

ARC920010049US1  
09/870,656

more important to optimize for participant x over participants y and z. Some examples of variables to optimize for, other than location, include airfare, flight availability, airline, etc. This is quite useful, for example, for participants traveling long distances.

#### REJECTIONS UNDER 35 USC 101

Claims 14-20 stand rejected under 35 USC 101 because the claimed invention is directed to non-statutory subject matter. As per examiner's suggestion, claims 14-20 have been amended without adding new matter to recite "a computer-based method". Based on the amendment, applicants respectfully request the examiner to withdraw the 35 USC 101 rejections.

#### REJECTIONS UNDER 35 USC §103(a)

Claims 1, 2, 4, 6-15 and 18-23 stand rejected under 35 USC 103(a) as being unpatentable over Bingham et al. (USP 6,324,517) in view of the article to Backhaus entitled, "An Engineer's View of Economics," (hereafter Backhaus). Claims 3, 5, 16 and 17 stand rejected under 35 USC 103(a) as being unpatentable over Bingham et al. in view of Backhaus, as applied to claims 1 and 14 above.

To establish a *prima facie* case of obviousness under U.S.C. § 103, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. Applicant contends, as will be seen from the arguments below, that the

ARC920010049US1  
09/870,656

Examiner, based on the office action of 6/16/2005, has failed to establish a *prima facie* case of obviousness under 35 U.S.C. § 103 (a).

With regard to independent claims 1, 14, and 21, the Examiner has cited the combination of the Bingham patent and the Backhaus paper as providing for a method for optimizing resources and dynamically scheduling said resources based on a rated clustering, calculating a center of mass associated with each of said rated, and optimizing at least one resource based on said identified resource and said calculated center of mass.

Bingham is cited by the Examiner primarily for its discussion of the evaluation of meeting or conference facilities. The Bingham method provides for an all-inclusive meeting cost used to rank a list of meeting facilities. In other words, a meeting facility is chosen, in the Bingham method, entirely on the basis of the *cost* of the meeting facility. This is in direct contrast to the present invention, which provides a rating and a center of mass calculation that more optimally selects a resource by factoring in the importance of the client. This teaches above and beyond the Bingham method, which determines a meeting facility solely on the basis of its proximity to meeting attendees.

With respect to claims 1, 14, and 21, the examiner cites column 9, lines 32-45 as providing for the limitation of identifying location coordinates associated with one or more participants, wherein each of said participants associated with a rating. Furthermore, on page 6 of the office action, the examiner repeatedly states that he "interprets the quantity of attendees from a given location [is]as a form of rating". This teaches away from the present invention as claimed. The rating of the present invention, in an example given on page 5, lines 15 and 16 of

Page 14 of 19

ARC920010049US1  
09/870,656

the Application As Filed, is an importance rating, “[F]or instance, an importance rating can be applied to meeting participants, indicating that it is more important to optimize participant  $x$  over participants  $y$  and  $z$ .” Clearly, this is different from simply adding up the number of attendees coming to a particular meeting.

With respect to claims 1, 14, and 21, on page 6 of the office action of 06/16/2005, the examiner states that he “interprets the quantity of attendees from one location to be a cluster”. Applicants are unaware how the examiner is equating both the “rating” and “cluster” limitations of the pending claims to “the quantity of attendees”. Applicants wish to emphasize that the “rating” and “cluster” limitations cannot be equated and there is no teaching the applicants’ specification or claims for such an equation.

Because a rating and a cluster are two different ideas, as defined and discussed in the present invention, it is impossible for them both to be described “the quantity of attendees from a given location.” As disclosed in the specification, a rating is measure of importance that can be applied to meeting participants, indicating that it is more important to optimize certain participants over others. On the other hand, one or more client location coordinates are identified and, from these coordinates, one or more clusters are detected.

With respect to claims 1, 14, and 21, applicants agree with the examiner that the Bingham et al. patent fails to teach the calculation of a center of mass associated with each of said rated clusters. Applicants, however, disagree with the examiner’s statement that such a limitation is taught for in the Backhaus article. Applicants also respectfully contend that there is no

ARC920010049US1  
09/870,656

motivation whatsoever in combining the teachings of the Backhaus article with the teachings of the Bingham et al. patent.

The calculation of a center of mass in the present invention provides for a weighting of each client in a client in a client cluster. This allows for a preference to be given to more highly rated clients. In other words, the more important the client, the more likely a resource will be chosen in an area proximate to the client.

On page 7 of the office action of 6/16/2005, the examiner contends that the Backhaus article teaches the calculation of center of mass associated with clusters. Applicants respectfully disagree with this statement as the Bingham reference makes *no mention* of the calculation of a center of mass. Therefore, applicants contend that there is no way that the Bingham reference can provide for the optimization of a resource based on this center of mass.

The Examiner also cites Bingham as providing for dynamic scheduling, however, a closer reading of the referenced sections makes no mention of scheduling that is done dynamically, as with the present invention. The present invention makes provisions for dynamic scheduling by also checking to see whether a meeting facility is currently occupied or scheduled – if the resource is not scheduled, then each of the participants associating with that particular meeting are notified regarding the scheduled resource. The Bingham reference does not provide for checking if a resource has already been scheduled.

The Examiner has cited the Backhaus reference and Launhardt's work as providing for a center of mass calculation for optimizing at least one resource based on said identified resource

Page 16 of 19

ARC920010049US1  
09/870,656

and said calculated center of mass, and for dynamically scheduling said optimized at least one resource.

Specifically, the Examiner cites Launhardt's "node theorem" in the application of determining the most efficient location of a blast furnace. Launhardt's node theorem simply speaks to determining where to place a resource such that the least physical labor is performed in move blast furnace building materials. The examiner even cites the example described on page 23 of the Backhaus article wherein the optimal location 'P' of the blast furnace is determined with respect to points 'A', 'B', 'C' forming a triangle. However, contrary to the examiner's interpretation, on page 23 of the Backhaus article, Backhaus specifically states that the optimal point 'P' is found "using proposition of external angles" NOT using center of mass calculations.

This is clearly different from the present invention in that the present invention speaks to scheduling the use of a resource, based on the proximity of both the resource and the resource participants. Furthermore, as mentioned above, Launhardt's node theorem determines the placement of a blast furnace; this is in direct contrast to the present invention in which a resource that is already situated is chosen from among many. The present invention provides for a selection and optimal balancing of both the clusters of a location coordinates identifying the meeting participants and the importance rating given to those participants. Hence, applicants contend that the combination of the Bingham and Backhaus references fail to teach many of the limitations of claims 1, 14, and 21.

The Examiner has stated that the motivation to combine stems from an optimization of cost in a business environment. However, it can hardly be said that the Backhaus reference

Page 17 of 19



ARC920010049US1  
09/870,656

provides for the optimal and dynamic resource scheduling. Hence, applicants contend there appears to be no suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify Bingham et al.'s teachings to incorporate the teachings of the Backhaus reference and provide for the teachings of claims 1, 14, and 21.

With regards to dependant claims 2-13, 15-20, 22, and 23, the arguments made above substantially apply in that these claims inherit the limitations of the independent claims upon which they depend. In light for the preceding arguments and minor amendments made to claims, it is therefore respectfully requested that the rejection of all claims, 1-23, be withdrawn.

Hence, applicants contend that the examiner has failed to establish a *prima facie* case of obviousness under U.S.C. § 103 as there is no suggestion or motivation, either in the Bingham et al. or Backhaus reference, or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings, and applicants further contend that the Bingham et al. and Backhaus references fail to teach or suggest all the claim limitations. Hence, applicants respectfully request the examiner to withdraw the rejections with respect to the pending claims.

#### SUMMARY

As has been detailed above, none of the references, cited or applied, provide for the specific claimed details of applicants' presently claimed invention, nor renders them obvious. It is believed that this case is in condition for allowance and reconsideration thereof and early issuance is respectfully requested.


Page 18 of 19

ARC920010049US1  
09/870,656

As this amendment has been timely filed within the set period of response, no petition for extension of time or associated fee is required. However, the Commissioner is hereby authorized to charge any deficiencies in the fees provided to Deposit Account No. 09-0441.

If it is felt that an interview would expedite prosecution of this application, please do not hesitate to contact applicants' representative at the below number.

Respectfully submitted,

  
Ramraj Soundararajan  
Registration No. 53,832

1725 Duke Street  
Suite 650  
Alexandria, Virginia 22314  
(703) 838-7683  
September 15, 2005